Claims

What is claimed is:

1. A gas turbine combustor consisting of a cylinder body which has a combustion region therein, comprising:

an air-container body which accommodates air for resonance for fluid particles serving as vibration elements of combustion vibration being generated in the said combustion region;

a junction body having a predetermined length which has one end thereof open to the said cylinder body and has other end thereof open to the said air-container body; and

a transverse body having vents where the said fluid particles cross internal of junction body and vibrate by resonance with air in the said air-container body.

2. A gas turbine combustor as described in Claim 1:

wherein, the said air-container body consists of a first box body which is installed outside the said cylinder body so as to form a first internal space having a predetermined capacity;

the said junction body consists of a first throat which has one end thereof open to the said combustion region or downstream area thereof and has other end thereof open to the said first internal space; and

the said transverse body consists of a first resistive element which has a multiple number of through-holes as the said vents and is inserted and engaged into the said one end of the said first throat.

3. A gas turbine combustor as described in Claim 2:

wherein, a bypass duct for adjustment of density of combustion gas is provided, which not only opens to the said combustion region or downstream area thereof in the said cylinder body but also opens to an internal of a casing forming a periphery of the said cylinder body, and supplies bypass air to an internal of the said cylinder body from the said casing;

wherein, the said one end of the said first throat open to an internal of bypass duct.

4. A gas turbine combustor as described in Claim 2:

wherein, an opening area of the said one end of the said first throat is larger than that of the said other end.

5. A gas turbine combustor as described in Claim 4:

wherein, the said other end of the said first throat has a resistive element having a multiple number of through-holes inserted and engaged.

6. A gas turbine combustor as described in Claim 4:

wherein, the said other end of the said first throat protrudes through the said first internal space and has a multiple number of through-holes formed in protruding portion thereof.

7. A gas turbine combustor as described in Claim 2:

wherein, a plurality number of the said box bodies are installed in parallel.

8. A gas turbine combustor as described in Claim 7:

wherein, at least one of opening area or length of each of the said other ends of the said first throat or capacity of each of the said first internal spaces differs from each other for every said first box body.

9. A gas turbine combustor as described in Claim 7:

wherein, at least one of each of the said first internal spaces has a resistive element having a multiple number of through-holes installed.

10. A gas turbine combustor as described in Claim 7:

wherein, at least one of each of the said first box bodies has a protruding plate installed, which protrudes through each of the said first internal spaces so as to form a continuous passageway from the said other end of the said first throat and has a multiple number of through-holes.

11. A gas turbine combustor as described in Claim 2, comprising:

a second box body at least one of which is installed, connecting to outside of the said first box body so as to form a second internal space having a predetermined capacity, respectively; and

a second throat having a predetermined length which opens respectively to the said adjoining first and second internal spaces;

wherein, each of the said second throats has a second resistive element having a multiple number of through-holes inserted and engaged to one end thereof being located on a side of the said first box body.

12. A gas turbine combustor as described in Claim 11:

wherein, an opening area of the said one end of the said second throat

is larger than that of other end thereof.

13. A gas turbine combustor as described in Claim 12:

wherein, the said other end of the said second throat has a resistive element having a multiple number of through-holes inserted and engaged.

14. A gas turbine combustor as described in Claim 12:

wherein, the said other end of the said second throat protrudes through the said second internal space and has a multiple number of through-holes formed in protruding portion thereof.

15. A gas turbine combustor as described in Claim 11:

wherein, a plurality of the said second box bodies are installed in parallel.

16. A gas turbine combustor as described in Claim 15:

wherein, at least one of opening area or length of each of the said other ends of the said second throat or capacity of each of the said second internal spaces differs from each other for every said second box body.

17. A gas turbine combustor as described in Claim 15:

wherein, at least one of each of the said second internal spaces has a resistive element having a multiple number of through-holes installed.

18. A gas turbine combustor as described in Claim 15:

wherein, at least one of each of the said second box bodies has a

protruding plate installed, which protrudes through each of the said second internal spaces so as to form a continuous passageway starting from the said other end of the said second throat and has a multiple number of through-holes.

19. A gas turbine, comprising an air compressor, a gas turbine combustor as described in Claim 2, and a turbine.

20. A gas turbine combustor as described in Claim 1:

wherein, the said air-container body consists of a box body which is installed outside the said cylinder body and so as to form an internal space having a predetermined capacity;

the said junction body consists of a throat which has one end thereof open to an area upstream of the said combustion region and has other end thereof open to the said internal space; and

the said transverse body consists of a resistive element which has a multiple number of through-holes serving as the said vents and is inserted and engaged into the said one end of the said throat.

21. A gas turbine combustor as described in Claim 20:

wherein, the said box body is installed inside a casing forming a periphery of the said cylinder body.

22. A gas turbine, comprising:

an air compressor and a turbine that are directly connected to each other by a main shaft; and

a gas turbine compressor as described in Claim 20 that is installed between the said air compressor and the said turbine.

23. A gas turbine, comprising:

an air compressor and a turbine that are directly connected to each other by a main shaft; and

a plurality of gas turbine combustors as described in Claim 1 that are installed on a same circumference of the said main shaft between the said air compressor and the said turbine:

wherein, the said air-container body consists of a first annulus pipe body which is installed outside a rear-end of each of the said cylinder bodies, being concentric with the said main shaft;

the said junction body consists of a first throat which has each of one ends thereof open to an are upstream area of each of the said combustion regions and has each of other ends thereof open to an internal of the said first annulus pipe body; and

the said transverse body consists of a first resistive element which has a multiple number of through-holes serving as the said vents and is inserted and engaged into each of the said one ends of each of the said first throats.

24. A gas turbine combustor as described in Claim 23:

wherein, a first dividing wall is installed, respectively, between each of said other ends of each of the said first throats inside the said first annulus pipe body.

25. A gas turbine combustor as described in Claim 23, comprising:

at least one second annulus pipe body which is installed, connecting to outside of the said first annulus pipe body and being concentric with the said main shaft; and

a second throat having a predetermined length which corresponds to each of the said first throats and opens to internals of the said adjoining first and second annulus pipe bodies, respectively;

wherein, each of the said second throat has a second resistive element having a multiple number of through-holes inserted and engaged to each of one ends located on a side of the said first annulus pipe body.

26. A gas turbine combustor as described in Claim 25:

wherein, a second dividing wall is installed, respectively, between each of the said other ends of each of the said second throats inside the said second annulus pipe body.

27. A gas turbine combustor as described in Claim 1:

wherein, the said junction body consists of a bypass duct which has one end open to the said combustion region or downstream area thereof in the said cylinder body and has other end thereof open to an internal of a casing forming a periphery of the said cylinder body;

the said air-container body consists of the said casing; and

the said transverse body consists of a plate-type member having a multiple number of through-holes serving as the said vents.

28. A gas turbine combustor as described in Claim 27:

wherein, the said plate-type member is movable by sliding in a

transverse direction against the said bypass duct, being of approximately same size as a transverse cross-section of the said bypass duct and having a plurality of through-holes areas in which a ratio of opening area of the said through-holes is different from each other.

29. A gas turbine combustor as described in Claim 28:

wherein, the said bypass duct is provided with a bypass valve which adjusts, by degree of opening and closure, a flow of bypass air being introduced into an internal of the said cylinder body from the said casing through the said bypass duct; and

the said plate-type member has a through area to go through for an approximately same size as a transverse cross-section of the said bypass duct.

30. A gas turbine combustor as described in Claim 28:

wherein, the said plate-type member has a through-area to go through for an approximately same size as a transverse cross-section of the said bypass duct, and a non-through-holes area not to exist the said through-holes for an approximately same size as a transverse cross-section of the said bypass duct.

31. A gas turbine combustor as described in Claim 27:

wherein, the said other end of the said bypass duct has a cylindrical member having a predetermined length inserted and engaged, which can protrude therein and out in a direction of an axis thereof.

32. A gas turbine combustor as described in Claim 1:

wherein, the said air-container body consists of a bypass duct which has one end thereof open to the said combustion region or downstream area thereof in the said cylinder body and has other end thereof open to an internal of a casing forming a periphery of the said cylinder body;

the said junction body consists of a dividing wall which crosses neighborhood of the said one end of the said bypass duct, and a protruding pipe which penetrates through the said dividing wall and protrudes through at least one surface of the said dividing wall; and

the said transverse body consists of a resistive element which has a multiple number of through-holes serving as the said vents and is inserted and engaged to the said protruding pipe.

33. A gas turbine combustor as described in Claim 32:

wherein, a plurality of the said dividing walls are installed in a row; and each of dividing walls is provided with the said protruding pipe and the said resistive element.

34. A gas turbine combustor as described in Claim 27 or Claim 32, comprising:

a box body which is installed outside the said cylinder body so as to form an internal space having a predetermined space; and

a throat having a predetermined length which opens to the said combustion region or downstream area thereof and opens to the said internal space;

wherein, the said throat has a resistive element having a multiple number of through-holes inserted and engaged.

35. A gas turbine, comprising an air compressor, a gas turbine combustor as described in Claim 27 or Claim 32, and a turbine.

36. A gas turbine combustor as described in Claim 1:

wherein, the said cylinder body has a resonator having a cavity installed around periphery thereof and has sound-absorption holes opening to the said cavity formed;

wherein, the said air-container body consists of a first box body which is installed adjacent to the said resonator so as to form a first internal space having a predetermined capacity;

the said junction body consists of the said resonator and a first throat which has one end thereof open to the said cavity and has other end thereof open to the said first internal space; and

the said transverse body consists of a side wall of the said cylinder body having the said sound-absorption holes serving as the said vents.

37. A gas turbine combustor as described in Claim 36:

wherein, the said first throat has a first resistive element having a multiple number of through-holes inserted engaged to the said one end.

38. A gas turbine combustor as described in Claim 37:

wherein, an opening area of the said one end of the said first throat is larger than that of the said other end.

39. A gas turbine combustor as described in Claim 38:

wherein, the said first throat has a resistive element having a multiple number of through-holes inserted and engaged to the said other end.

40. A gas turbine combustor as described in Claim 36:

wherein, a plurality of the said first box bodies are installed in parallel to the said resonator.

41. A gas turbine combustor as described in Claim 40:

wherein, a dividing wall is installed, respectively, between each of the said one ends of each of the said first throats in the said cavity of the said resonator.

42. A gas turbine combustor as described in Claim 41:

wherein, the said dividing wall serves as a resistive element having a multiple number of through-holes.

43. A gas turbine combustor as described in Claim 40:

wherein, each of the said first box bodies being installed in parallel and adjoining each other has a first wall surface which is shared so as to form the said internal space, respectively; and

the said first wall surface serves as a resistive element having a multiple number of through-holes.

44. A gas turbine combustor as described in Claim 36:

wherein, the said resonator and the said first box body have a

plurality of fluid-introducing holes formed therein, which introduce cooling fluid from outside to inside, respectively.

45. A gas turbine combustor as described in Claim 36:

wherein, the said resonator and the said first box body have a drain hole formed therein, which discharges stagnant liquid from inside to outside, respectively.

46. A gas turbine combustor as described in Claim 36, comprising:

at least one second box body which is installed, connecting to outside the said first box body, so as to form a second internal space having a predetermined capacity, respectively; and

a second throat having a predetermined length which opens to the said adjoining first and second internal spaces, respectively;

wherein, each of the said second throats has a second resistive element having a multiple number of through-holes inserted and engaged to one end located on side of the said first box body.

47. A gas turbine combustor as described in Claim 46:

wherein, an opening area of the said one end of the said second throat is larger than that of other end thereof.

48. A gas turbine combustor as described in Claim 47:

wherein, the said second throat has a resistive element having a multiple number of through-holes inserted and engaged to the said other end.

49. A gas turbine combustor as described in Claim 46:

wherein, a plurality of the said second box bodies are installed to the said first box body in parallel.

50. A gas turbine combustor as described in Claim 49:

wherein, each of the said second box bodies being installed in parallel and adjoining has a second wall surface that is shared so as to form the said second internal space, respectively, and serves as a resistive element having a multiple number of through-holes in the said second wall surface thereof.

51. A gas turbine combustor as described in Claim 46:

wherein, the said second box body has a plurality of fluid-introducing holes formed therein, which introduce cooling fluid from outside to inside.

52. A gas turbine combustor as described in Claim 46:

wherein, the said second box body has a drain hole formed therein, which discharges stagnant liquid from inside to outside.

53. A gas turbine, comprising an air compressor, a gas turbine combustor described as Claim 36, and a turbine.